

## **Unveiling the Threads of Traditional Icon of Sindh: A systematic review on the cultural significance, artistic elements and documentation of Ajrak**

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### **Abstract**

Ajrak, a distinctive textile and cultural legacy of Sindh, Pakistan, embodies its historical, social, and artistic heritage through vibrant colours and symbolic motifs. Despite challenges, artisans demonstrate their dedication to it by experimenting with new designs, layouts, colour schemes, and materials to meet modern demands. This study attempts to contribute to the preservation process by employing a systematic literature review (SLR) to critically analyse existing literature, identify research gaps, and explore areas for future research. This study emphasises the innovative and collaborative efforts among artisans, governmental bodies, and scholars to maintain its economic viability, global recognition, and cultural significance.

**Keywords:** Ajrak; Sindhi Ajrak; Textile-based handicraft; Systematic Literature Review (SLR)

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DOI: <https://doi.org/10.21834/e-bpj.v10iSI29.6921>

### **1.0 Introduction**

Sindh is a Pakistani province and the home of the Indus Valley civilization, which includes two sites: Harappa and Mohenjo Daro (Solangi et al., 2016). From primitive periods it's a connecting pole of the Iranian plateau and Indian subcontinent, attracting invaders and traders who came here with the traits of their civilisations (Kakepoto, 2015). Artisans of Indus civilization were skilled in dyeing & printing, and the abundance of natural ingredients such as Neer plants (Indigo Ferra Tinctorial), madder, and cotton enabled them to practice the handicraft known as Ajrak (Kesaboina et al., 2023). Excavation of dyeing vessels and hand printed fabric from the two Indus Valley sites validate it (R, 2024). The primary samples made with the resist dye- a method used for Ajrak are extracted from Al-Fustat, Quseir al-Qadim, Qasr Ibrim and Nubia (Egypt) during the early 20<sup>th</sup> century (Audinet, 2019). These samples have Indian origin and link with Ajrak tradition of Sindh and Gujarat (Audinet, 2019).

Block printing- an ancient printing method is used to transfer designs in its three grids called Jaal (central part), Wat (borders), and Paland (lateral end) (Choudhary, 2017). Its production method comprises 21 steps of soaking, washing, printing, and dyeing. The use of elements like cow or camel dung, plants, vegetables, fruits, metals (iron), mordants, and minerals for colour extraction and resist dye represents its association with nature. Ajrak becomes a more significant part of Sindhi culture by symbolising its past, traditions, and social beliefs through vibrant colours and symbolic motifs (Khan, 2024). Ajrak's making process shifted practically from generation to

generation, making it a family-oriented craft (Rehmani & Phulpoto, 2012). Even though artists bring innovations by using new designs, colour schemes, fabrics, and attire to fulfil the demands of modern society (Jan & Shar, 2019).

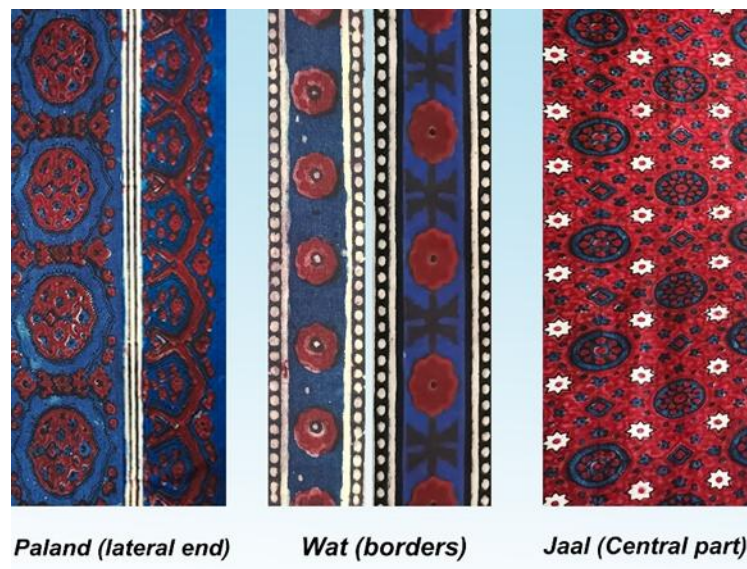


Fig. 1: Different Parts of Ajrak  
(Source: Author)

Still, this handicraft is facing challenges that threaten its survival, including limited scholarly literature, lack of interest among young artisans, a reduction in the making steps, a decrease in consumer demand, and market value (Rehmani & Phulpoto, 2012; Choudhary, 2017). Although studies are conducted on numerous aspects of Ajrak however, it requires more research on its unfolded sides to discover the proper ways of preservation. Consequently, the objective of this paper is to use a Systematic Literature Review (SLR) to critically analyze the previously discussed aspects of Ajrak, identify gaps, and try to locate new aspects for future studies.



Fig.2: Different Types of Traditional Ajrak  
(Source: Author)

## 2.0 Literature Review

Although existing literature on Ajrak covers numerous aspects but will the help of Systematic Literature Review, gaps will be found to design new frameworks and models for future studies (Snyder, 2024). In this process emphasis will be on literature review typologies, steps for systematic reviews, (Sharif et al., 2021) and offer suggestions for enhancing rigour in planning education and research (Ogunmakinde et al., 2024).

### 2.1 Historical and Cultural Significance

Ajrak has significant place among Sindhi handicrafts and society (Rauf & Kamal , 2023). Noorjehan Bilgrami, a pioneer Pakistani scholar documents historical background, cultural significance, and traditional methods of Ajrak in her book and article during 1998 and 2000. It presented as an icon of cultural dignity, generosity and respect ( Khatti et al., 2023). Its creation from raw fabric to printed shawl can be compared with Sufism, a spiritual practice of becoming close to God or from unpure to pure form (Lajwani et al., 2016). (Shroff, 2022)

links the Ajrak shawl with spirituality and self-depiction, using Abida Parveen's signature fashion style as an example. (Choudhary, 2017) and (Karolia & Buch, 2008) are Indian scholars who cover the community involvement and social significance of Ajrak.

## 2.2 Traditional Ajrak Production and Economic Aspect

Almost all studies cover the basic production method of the traditional Ajrak. (R, 2024) and (Pandey A., 2002) draw attention to the historical importance of printing for textiles and especially discuss block printing dated from the Indus Valley civilization to now including Ajrak from Kutch-Gujarat, Rajasthan, and other regional prints. (Cousin, 2008) compares dyeing techniques and the cultural importance of textiles in Pakistan and India. The use of natural dyes is an ancient skill and is notable part of Ajrak and article by (Kesaboina et al., 2023) help to explore natural dye and their connection with Indus Valley. (Kulick, 2015) used Ajrak as a key example to investigate the challenges faced by Pakistani artisans, particularly those at the Bottom of the Pyramid (BOP) and discusses the collaboration of organisations with artisans to promote crafts globally. Correspondingly, (Jan & Shar, 2019) highlight the socio-economic conditions of Ajrak artisans and its traditional production process.

## 2.3 Modern Technology and Design

(Agrawal & Rastogi, 2022) document the use of Adobe Photoshop to create digital designs from traditional Ajrak patterns. Articles by (Dua, 2016) and (Edwards, 2016) analyse how modern market demands influence traditional Ajrak designs. Moreover, (U & Varghese, 2023) emphasize the need for innovation and experimentation with Ajrak printing using hand painting techniques. (Simair et al., 2023) examine the impact of digital printing technologies on traditional Ajrak designs and local producers. (Buch, 2022) discusses endangered textiles, such as Ajrak, and the need for modern preservation experiments.

## 3.0 Research Methodology

Methodology plays an important role in building strong reasoning for a research study by reviewing previous literature (Snyder, 2024). Hence, the method for this study is a systematic literature review (SLR), which allows scholars to evaluate existing data on certain standards (Ogunmakinde et al., 2024). This research paper contains important steps like inclusion and exclusion criteria, identification, screening, quality and eligibility assessment, and data extraction and synthesis (Fig. 5). Following this methodology, data was collected from reliable databases, including Scopus, Google Scholar, ProQuest, Research Gate, IEEE Xplore, Emerald Insight, and the Pakistan Research Repository by HEC, Pakistan. As per some scholars, the database is not a comprehensive source; thus, the purpose of adding all these databases is to compile more inclusive data (Sharif et al., 2021). For the data collection, keywords need to be more general and should cover all basic aspects of the case study (Wan Ismail et al., 2021). Accordingly, keywords like Ajrak, Ajrakh, traditional art, cultural heritage, Sindhi Ajrak, textile-based handicraft, resist dye printing, natural dye, and block printing are used in the process of identification (Steffen et al., 2024). As this study included more than one database, each has its query string to search on a basic and advanced level. For query strings, most of the databases provide different symbols, keywords, timelines, and Boolean operators like "AND" and "OR" to connect them for search (Fig. 3). Google Scholar and Research Gate offer different query strings with timeline, sort by relevance or date, and types of data (Fig. 4).

The screenshot shows a search interface with a tab labeled "Advanced". Below the tab, there is a text input field containing the query string: "TITLE-ABS-KEY( Ajrakh AND cultural heritage AND Sindhi Ajrak AND textile-based handicraft AND resist dye printing AND natural dye AND block printing)". Above the input field, there is a label "Boolean operator" with an upward arrow pointing to the "AND" operators in the query string. Below the input field, there are buttons for "Outline query", "Add Author name / Affiliation", "Clear form", and a "Search" button with a magnifying glass icon.

Fig. 3: Search/query string of Scopus and other databases  
(Source: Website of databases)

The screenshot shows a search results interface. At the top, it says "Search results in Research" and "Sort by relevance" with a dropdown arrow. Below this, there are two dropdown menus: "All types" and "Any time". To the right of these menus is a toggle switch labeled "Only full-texts".

Fig. 4: Search/query string of Google Scholar and Research gate  
(Source: Website of databases)

### 3.1 For the Initial Research Data

Table 1 shows the eligibility criteria for literature, and in the country category, India and Pakistan are added because both share this handicraft (Rehmani & Phulpoto, 2012; Modathi, 2018). Therefore, in keywords, two spellings are used for Ajrak because terminology also counts while doing a cross-country comparison (Xiao & Watson, 2019). The period of literature publication is starting from 2000 till now to understand the research gaps, strengths, and weaknesses of data more precisely.

Table 1. List of Criteria, Eligibility and Excluded		
Criteria	Eligibility	Excluded
Literature Type	Journal, Articles, Books, Conference Papers	Unpublished papers, Thesis
Country	Pakistan, India	Other Countries
Year Published	2000 until now	

(Source: author)

The data review began by compiling the articles and books according to their databases. At the first stage of data collection, fifty-six articles and five books were obtained, then identified according to the criteria mentioned in Table 1. Scopus the best database, which contains many studies around the world, shows two results: one is not related to Ajrak, and the other provides a little information about it. Similarly, *Emerald Insight* and *ProQuest* also show one and two articles, respectively. Most of the data, including fifty-one articles with five books, is available on *Google Scholar* and *Research Gate*. *IEEE Xplore* and *Pakistan Research Repository by HEC*, *Pakistan* did not have any article or book on Ajrak. Furthermore, the repetition process of data is solved through filtration, and articles are kept in the box of the main database. After a complete screening, twenty-two articles and three books are relevant, providing substantial information. For in-depth analysis, data is divided into subunits according to country, years of publication, and authors.

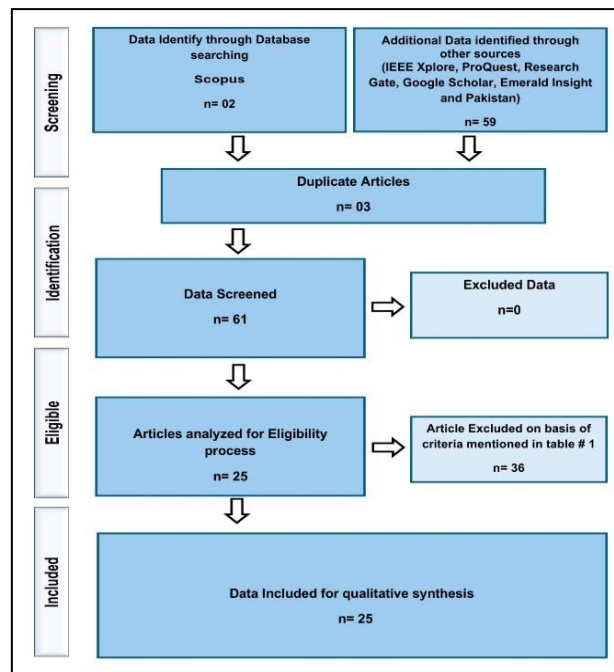


Fig. 5: Flow chart of the study according to the PRISMA Systematic Analysis Methodology  
(Source: Author)

## 4.0 Results and Findings

### 4.1 According to the Country

Based on the comprehensive data analysis in terms of countries, it reveals that most of the articles are written by Indian scholars. (Table 2).

Table 2: Data division according to Countries		
No. of Publications	Country	% Percentage
9	Pakistan	36%
16	India	64 %
25		100%

(Source: Author)

#### 4.2 According to the Year of Publication in Data Sources

The next step of finding is the distribution of data according to their publication year. Most of the articles were written in 2022 with 16 % and in the rest of the years the percentage varied between scales 0 to 08 (*Table 3*)

Table 3: Number of articles based on year of publications

Publication year	No. of Publication		Total	% Percentage
	Scopus	Additional Data identified through other sources. (IEEE Xplore, ProQuest, Research Gate, Google Scholar, Emerald Insight and Pakistan Research Repository by HEC, Pakistan)		
2025	0	2	2	08%
2024	0	1	1	04%
2023	0	2	2	08%
2022	1	3	4	16%
2021	0	1	1	04%
2020	0	2	2	08%
2019	0	1	1	04%
2018	0	1	1	04 %
2017	0	1	1	04%
2016	0	1	1	04%
2015	0	0	0	00 %
2014	0	2	2	08%
2013	0	1	1	04%
2012	0	1	1	04%
2011	0	1	1	04%
2010	0	0	0	00 %
2009	0	1	1	04%
2008	0	2	2	08%
2007	0	0	0	00 %
2006	0	0	0	00 %
2005	0	0	0	00 %
2004	0	0	0	00 %
2003	0	0	0	00 %
2002	0	0	0	00 %
2001	0	0	0	00 %
2000	0	1	1	04%
Grand Total	1	24	25	100%

(Source: Author)

#### 4.3 Articles According to the number of Authors

Table 4 displays the data categorisation according to the number of authors. Pakistan-based articles by a single author cover 100 per cent of Scopus and 37.50% of other data sources. Whereas Indian-based articles fall in all author categories but did not have Scopus-based articles with 0%. Indian articles with one author show the majority with 62.50%.

Table .4: Articles according to the no. of Authors

No. of Authors	Country	Scopus		Additional Data identified through other sources (IEEE Xplore, ProQuest, Research Gate, Google Scholar, Emerald Insight and Pakistan Research Repository by HEC, Pakistan)	
			% Percentage		% Percentage
1 Author	Pakistan	1	100 %	3	37.50 %
3 Authors		0	0 %	1	12.50%
2 Authors		0	0 %	2	25%
4 Authors and more		0	0 %	2	25 %
Total		1	100%	8	100%

1 Author	India	0	0 %	10	62.50%
2 Authors		0	0 %	4	25.00 %
3 Authors		0	0 %	1	06.25%
4 Authors and more		0	0 %	1	06.25 %
Total		0	0%	16	100%

(Source: Author)

#### 4.4 Data Collection According to Keywords

Data collection as per keywords, show that most of the articles used relevant keywords to Ajrak except Part 1&5 (Table 5).

Table 5: Articles based on keywords

Sr. No	Key Words	Authors	Country	Year	Name Of Articles
1.	international intellectual property law, WTO-TRIPS agreement-geographical indications, GIs: geographical indications, TK: traditional knowledge, WIPO intergovernmental committee on genetic resources.	Michael Leslie Blakeney	India/ Pakistan	2009	Protection of Traditional Knowledge by Geographical Indications
2.	Ajrak, Sindh, Natural dyes, Cultural Heritage, Craft preservation	Noorjehan Bilgrami	Pakistan	2002	Ajrak: Cloth from the soil of Sindh
3.	Ajrak, Cultural object, Semiotics, Social meaning	Nadia A. Rehmani, Najma Phulpoto		2012	Ajrak as Symbol: The Fabric of Life and Cultural Affinity
4.	preservation; cultural heritage; handicrafts; challenges	Yongzhong Yang, Mohsin Shaf, Xiaoting Song and Ruo Yang		2018	Preservation of Cultural Heritage Embodied in Traditional Crafts in the Developing Countries. A Case Study of Pakistani Handicraft Industry
5.	Craft production, Research by Chance, Empowerment, Poverty alleviation	Gwendolyn Kulick		2015	Conducting design research in Pakistan's craft sector: Opportunities and limitations
6.	Block printing, Ajrak, contemporary products, fabrics and patterns	Asra Jan, Bhai Khan Shar		2019	Block Printing in Sindh, AJRAK and other Contemporary Products
7.	Socio-Economic, Handicrafts, Women, Middleman, Earning	Bakhtawar Nizamani, Meetha Ram, Danish Latif Nizamani		2019	Sindh handicrafts and socio-economic status of women "A Case Study from District Tando Allahyar Sindh Pakistan"
8.	Ajrak, Sindh, Indigenous, Artistic sensibility, Expression, Representation	Umaira Hussain Khan		2024	Ajrak' as an Indigenous Tradition of Sindh, Pakistan
9.	Ajrakh, Indigo dye, Resist printing, Madder, Mordant	Anjali Karolia, Heli Buch	India	2008	Ajrakh, the resist printed fabric of Gujarat
10.	Cultural heritage, Resist dyeing, Traditional crafts, Block printing, Textile tradition, Craft innovation, Globalization	Sharmila J. Dua		2016	Title: AJRAKH- A Textile Tradition in Transition
11.	Ajrakh, Indigo and madder dyes, Artisan-designer collaborations, Fashion adaptation	Eiluned Mair Edwards		2016	Ajrakh: From Caste Dress to Catwalk
12.	Printing, Ajrak, motif, dyeing, blocks	Anshu Singh Choudhary		2017	Ajrak printing: A testimony to ancient Indian arts and crafts traditions
13.	textile, dyeing, printing, Indian, fashion, famous, world, colours, state, generations	Gagan B Khanna		2019	Indian Textile Dyeing and Printing Famous All Over the World
14.	Hand Block, Looms, Cotton Fabric, Natural Dye Colors, Dress Material	Anjali Pandey		2022	Some iconic textile craft of hand block prints in India
15.	Ajrak, Photoshop, Realistic Patterns, Historical, Florals Motifs, Culture, Resist Printing	Drishti Agrawal, Twinkle Rastogi		2022	Adaptation of Ajrak motifs in Adobe Photoshop Software for the Development of Repetitive Prints with Reference to Inspiration Board
16.	Handicraft, Block printing, Hand painting, Ajrakh, Natural dyes	Priyanka U, Nirmla Varghese		2023	Design transformation: Ajrakh traditional printing to hand painting
17.	Textile Craft, Patterns, Block Printing, Natural Dyes, Designs	Anjali Pandey		2025	Ajrakh - The Ancient Block Printing Textile Craft of India

(Source: Author)



## 5.0 Discussion

### 5.1 Data Analysis with Final Screening Results

For this section, the approaches of the articles will be discussed and divided according to their country with a ratio of 9:16 to find out the research gap in this specific field.

#### 5.1.1 Articles by Pakistani Scholars

As for the articles written by Pakistani scholars, the most relevant study was done by Noorjehan Bilgrami. She published a book, "Sindh Jo Ajrak," in 1998, which covers all aspects of traditional Ajrak, used as a citation by scholars from Pakistan and India. For this study, her article, with the title "*Ajrak: Cloth from the Soil of Sindh*, (2000)" is included to understand the historical background of the handicraft, its importance in Sindh, the role of natural materials, the making of traditional Ajrak, pattern development, and the influence of ancient art. She compared a cloud-shaped Ajrak pattern named "*Kakar*" to the patterns found on the King-Priest statue of Indus Valley, Sumerian bulls of Mesopotamia, and Egypt's Hator cow. In conclusion, she indicates issues that damage this handicraft and gives suggestions for preservation. In addition, (Rehmani & Phulpoto, 2012), discussed the prominence of Ajrak according to cultural, social, and political contexts by analysing it with a semiotic approach. (Kulick, 2015) surveys the potentials and restrictions for the underprivileged craftsman in the craft industry of Pakistan in terms of income, basic life needs, and education about recent technologies. He introduced the term "BOP" (Bottom of Pyramid) for artisans who are managing small-scale businesses. He also explored how different organisations of India (SEWA & Dastkar) and Pakistan (Ajrak project- Koel by Noorjehan Bilgrami) collaborate with masters of different crafts to introduce them globally. (Jan & Shar, 2019) research explores the background of ancient methods of dyeing and printing by focusing on the Ajrak. Scholars use interviews and questionnaires to collect data about the production process, artisan's lifestyle, types of Ajrak, experience, income, reasons for decline, and problems hindering the preservation process. On the other hand, few intellectuals give an overview of Ajrak as an example or as part of other crafts of the area. (Shroff, 2022) takes the signature fashion style of Pakistani Sufi singer Abida Parveen, including the Ajrak shawl along with a masculine kurta (tunic) and matching shalwar (loose trousers), as a case study to support the link between gender, spirituality, fashion, and self-representation. (Kakepoto, 2015) and (Shah et al., 2024) also added Ajrak to Sindhi cultural characteristics while conducting a detailed study on Sindh's social, cultural and ethical attributes. (Khan, 2024) explores Ajrak in the context of culture, form of expression and modernity.

#### 5.1.2 Articles by Indian Scholars

(Choudhary, 2017) and (Karolia & Buch, 2008) covered the basic aspects of Ajrak, like production method, materials for dyeing and printing, fabric, community, social importance, problems, and limitations. (Pandey A., 2002) explores the block printing techniques that were practised in different Indian regions from ancient times like Ajrak from Kutch-Gujarat and Barmer, Bagru Sanganer from Rajasthan, Kalamkari from Andhra Pradesh, and Madhya Pradesh's famous Bagh prints. Some scholars used an advanced approach by connecting Ajrak with modern technology, design, software, and dyeing techniques. (Agrawal & Rastogi, 2022) attempt to document the use of Adobe Photoshop (a computer software for digital design and editing) to create digital Ajrak designs. They provide a perception of how to extract one motif from traditional patterns and repeat it in different directions or sizes to create contemporary design layouts with distinct colour schemes. Furthermore, it is discovered that numerous experts have extensively studied the evolution of the traditional Ajrak. (Dua, 2016; Edwards, 2016; Modathi, 2018) evaluate collaboration of artisans with government institutions, NGOs, and fashion designers which allows them to exploration of new colour schemes, design layouts, motifs, fabrics, and chemical dyes to fulfil the demand of the modern market. Study done by (U & Varghese, 2023) with the title Design Transformation: Ajrak Traditional Printing to Hand Painting, gives insight into the modernised version of Ajrak hand block printing in Kutch, Gujarat. The making process of Ajrak is experimented with hand-painting technique on contemporary Western garment collections. It delves into the uniqueness of this traditional craft, the need for innovative ideas, and the use of natural dyes to control costs. The most striking element covered by (Pandey A., 2025) are local terminology of design and change in the usage of Ajrak.



Fig. 6: Contemporary Ajrak Design  
(Source: Author)

### 5.1.3 Books on Ajrak'

This SLR study explores a few books that have complete chapters covering various features. (Cousin, 2008) writes a whole chapter with the title *Colour and Light: The Textiles of Sindh between Sky and Erath* to explore the textiles of Sindh, apparel styles, cultural significance, various stages of printing and dyeing, comparison of the styles of Pakistan and Indian states, appreciation of artisans, and market integration. *Scarce Textiles* by (Buch, 2022) uncovers information about textiles that are on the edge of elimination from Indian society. The first part of the book is about Ajrak, the best example of ancient block printing, and gives basic information about materials, colours, printing, and dyeing methods, along with their contemporary uses. According to her, experimenting with its design layouts with new materials and colour schemes is a requirement for preservation. Next one is recently published Chapter 12: "*Emerging market trends: the cultural designs printed with digital printing technology: an overview of Ajrak design*" by (Simair et al., 2023) of the book *Digital Textile Printing Science, Technology, and Markets*, which focusses on the history of textiles in Pakistan, traditional clothes of Sindh, especially Ajrak, highlighting the impact of technical innovations in digital textile printing on local producers.

## 6.0 Conclusion and Recommendation

As per analysis, it is concluded that Pakistani scholars survey the traditional Ajrak in terms of symbolic meaning, social importance, creation-process and acknowledge the challenges it is facing. However, researchers should improve their research criteria to explore and promote Ajrak, locally and globally comprehensively. For instance, its chronological analysis will be helpful to trace its evolution from ancient times to now. Moreover, limited data is found on its contemporary types, so comparative studies on this aspect will be helpful to differentiate between traditional and modern Ajrak through its designs, layouts, and colour combinations. The next recommendation that needs consideration is the unification of contemporary techniques and digital tools with traditional Ajrak making without compromising its authenticity. With these research studies, new strategies can be identified to improve the economic condition of artisans, attract young artisans, market dynamics, and the potential for economic empowerment through handicrafts. Therefore, the government, craft preservation institutions, NGOs, and educational experts should join hands to preserve this integral part of Sindhi society.

## Paper Contribution to Related Field of Study

Textile, Craft, Design

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